

In re Patent Application of:

MCCARTHY ET AL.

Serial No. **10/779,402**

Filed: **FEBRUARY 13, 2004**

REMARKS

The Examiner is thanked for the careful examination of the present application. Independent Claims 1, 9, 14, and 17 have been amended to more clearly define over the prior art. Support for these amendments may be found in paragraph 20 of the originally filed specification. In view of the amendments and arguments presented in detail below, it is submitted that all claims are patentable.

I. The Amended Claims

Amended independent Claim 1 is directed to a communications system that includes a plurality of servers connected together in a network for processing a plurality of different job types having respective different resource usage characteristics associated therewith. Each server determines its own respective health metric based upon at least one job being processed thereby and weighs the health metric based upon the respective resource usage characteristic of the at least one job. The resource usage characteristic represents resources being consumed by the at least one job.

The servers map the weighted health metrics for different resource usage characteristics to a common scale. The communications system includes a dispatcher for collecting the commonly scaled weighted health metrics from the servers by polling the servers for the weighted health metrics and distributing jobs to the servers based thereon.

Independent Claim 9 is directed to a load distributor

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for a plurality of servers and has been similarly amended. Independent Claim 14 is directed to a job distribution method for a plurality of servers and has been similarly amended. Independent Claim 17 is directed to a corresponding computer readable medium and has been similarly amended.

II. The Amended Claims Are Patentable

The Examiner maintained his rejection of independent Claims 1, 9, 14, and 17 over the combination of Albert et al. and Richter et al. Albert et al. is directed to a system and method for selecting a server to handle a connection. The method includes receiving at a service manager a connection request intercepted by a network device having a forwarding agent that is operative to receive instructions from a service manager, the connection request having been forwarded from the forwarding agent on the network device to the service manager.

A preferred server is selected at the service manager from among a group of available servers. The preferred server is the server that is to service the connection request. Instructions are sent from the service manager to the forwarding agent. The instructions include the preferred server that is to service the connection request so that the connection request may be forwarded from the network device to the preferred server. The servers send feedback messages to the service manager. The service manager uses these feedback messages to perform load balancing.

The Examiner correctly recognized that Albert et al. fails to disclose that its servers map the weighted health

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metrics for different resource usage characteristics to a common scale. In an attempt to provide this critical deficiency, the Examiner combined Albert et al. with Richter et al. Richter et al. is cited as disclosing the use of different resource usage characteristics.

The Examiner correlated the weights of Albert et al. to the health metric of independent Claim 1, and the virtual machines of Albert et al. to the at least one job of independent Claim 1. Moreover, the Examiner correlated the normalization of the weights of Albert et al. to weighting the health metrics of independent Claim 1.

Applicant previously argued that Albert et al. (and therefore the combination of Albert et al. and Richter et al.) fails to disclose weighting the health metric based upon the respective resource usage characteristic of the at least one job. More particularly, Applicant argued that while Albert et al. discloses the derivation and normalization of weights of virtual machines, based upon the allocated processing capacity of those virtual machines, those weights are based upon the amount of processing capacity of a physical server that is allocated to virtual machines, and not a resource usage characteristic of the virtual machine.

In the Advisory Action, the Examiner responded to this argument by stating that he considers the allocation of processing capacity by a physical server to the virtual machines of Albert et al. to disclose the resource usage characteristics of independent Claim 1. To address this argument, independent Claim 1, for example, has been amended to recite that the

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resource usage characteristic represents resources being consumed by the at least one job.

As discussed above, Albert et al. discloses the derivation and normalization of weights of virtual machines based upon the processing capacity of a physical server allocated to the virtual machines. As explained in col. 30, lines 4-11

In one embodiment, the feedback message includes a weight that expresses how much processing capacity or bandwidth the server has to handle connections for certain applications that correspond to certain virtual IP addresses. It is particularly advantageous to normalize the weight so that the weight of each server expresses its relative capacity to process packets, that is, its capacity compared to the capacity of all other servers that are available.

The allocation of processing capacity does not disclose resources that are being consumed by the virtual machines. That is, as explained in the above cited portion, the weights of Albert et al. are based upon the amount of resources available to the virtual machines, and not the amount of resources being consumed by those virtual machines. Further support for this argument is provided by col. 3, lines 35-38 of Albert et al., which explains that "processing capacity from the budget of one virtual machine may be allocated to a different virtual machine temporarily if that processing capacity is not being used." Since processing capacity may be reallocated, all processing capacity of each virtual machine is not consumed, and the weights of Albert et al. are not based upon resources consumed by the virtual machines. As such, Albert et al. fails to disclose

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weighting the health metric based upon the respective resource usage characteristic of the at least one job, the resource usage characteristic representing resources being consumed by the at least one job, as recited in independent Claim 1.

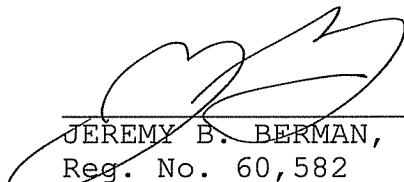
Since Richter et al. fails to provide this critical deficiency of Albert et al., amended independent Claim 1 is patentable over the combination of Albert et al. and Richter et al. Independent Claims 9, 14, and 17 contain similar recitations, have been similarly amended, and are patentable for the same reasons. The dependent claims, which recite yet further distinguishing details, are likewise patentable and require no further discussion herein.

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CONCLUSION

In view of the amendments to the claims and the arguments provided herein, it is submitted that all the claims are patentable. Accordingly, a Notice of Allowance is requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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